



LANDAU  
ASSOCIATES,  
INC.

Geoenvironmental Engineering and Technologies

COLSF  
Colbert 8.4 U1

November 10, 1989

Mr. Neil Thompson  
Environmental Protection Agency  
Park Place Building  
1200 - 6th Avenue  
Seattle, Washington 98101

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SUPERFUND DIVISION

**PROGRESS REPORT  
COLBERT LANDFILL RD/RA  
OCTOBER 1989**

Presented herein is the October 1989 progress report for the Colbert Landfill RD/RA Superfund Project (Project). This progress report has been prepared by Landau Associates, Inc. (Landau), Spokane County's (County) engineering consultant. It addresses the reporting requirements specified in Section XI of the Project Consent Decree, including:

- 1) A description of Remedial Action activities commenced or completed during the reporting period,
- 2) Remedial Action activities projected to be commenced or completed during the next reporting period (through November 1989), and
- 3) Any problems that have been encountered or are anticipated in commencing or completing the activities.

**1.0 ACTIVITIES COMMENCED/COMPLETED DURING REPORTING PERIOD**

Several activities were commenced and/or completed during the reporting period. Most of these activities are related to continuation of Phase I field activities. Specific activities commenced and/or completed during this period include:

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- o The Well Verification Survey was completed. Survey results and proposed Phase I - South System monitoring well locations are presented in the attached technical memorandum.
- o Laucks Testing Laboratories, Inc. has been selected as the analytical laboratory for chemical analysis of water and air samples collected during Phase I activities.
- o A summary of key points for the Phase I Pilot Well Plan was provided to EPA/Ecology on November 2, 1989. (Plan due for submittal to EPA/Ecology by December 1, 1989.)
- o Well construction activities have been commenced, completed, and are ongoing at number of Phase I monitoring well locations (refer to the attached Site Plan, Figure 1):
  - The first well at location CD-20, was completed. The boring was advanced to about 222 feet (ft) below ground surface (BGS), and the well is screened from about 186 ft to 191 ft BGS (at the base of the basalt aquifer in the Latah/Basalt Formation). One additional well will be constructed at this location, and will be screened at the top of the basalt aquifer.
  - The first well at location CD-21 was completed (November 3). The boring was advanced to weathered granite bedrock, with a total boring depth of 325 ft BGS. The well is screened from about 280 ft to 300 ft BGS at the base of the Lower Sand/Gravel Aquifer. Only a thin zone of (low permeability) Latah Formation was encountered in the boring, consequently a well will not be installed in this unit (based on discussions with EPA and Ecology personnel); instead, two monitoring wells will be

installed in the Lower Sand/Gravel Aquifer at this location.

- The first well at location CD-42 was completed (November 4). The boring was advanced to about 416 ft BGS, and the well is screened from about 380 ft to 400 ft BGS (at the base of the Lower Sand/Gravel Aquifer). The Latah Formation was not encountered at this location and weathered granite bedrock was encountered immediately below the Lower Sand/Gravel Aquifer. Two additional monitoring wells, both screened in the Lower Sand/Gravel Aquifer, will be constructed at this location.
  - The first boring at location CD-41 was completed, to a total depth of about 424 ft BGS. The base of Lower Sand/Gravel Aquifer was encountered at about 400 ft BGS, and was underlain by weathered granite bedrock to the completed depth. Three monitoring wells will be constructed at this location, all screened in the Lower Sand/Gravel Aquifer.
  - The second and third monitoring wells were completed at location CD-40. The wells were screened from about 34 ft to 44 ft BGS and from 124 ft to 144 ft BGS, respectively.
- o Three modifications were made to the well construction procedures from those described in the Phase I Monitoring Well Construction Plan (Plan), with the concurrence of EPA/Ecology. These changes include:
- Collection of driven samples from the first boring at location CD-41 was discontinued at a depth of about 340

ft BGS due to excessive (up to 70 feet) heave in the formation. Drilling procedures were modified to allow the collection of more representative grab samples during advancement of the remainder of the boring. Cable tool drilling is being (or will be) used for the first boring at the other two monitoring well locations along the highway (CD-42 and CD-43) to avoid similar heave problems during the collection of driven samples.

- Well screen and filter pack sizing criteria have been modified to allow greater flexibility in addressing variable aquifer material conditions. The Plan specifies a 0.010-inch slot screen and No. 10-20 Colorado silica sand filter pack for all monitoring wells. Monitoring well design procedures have been modified to allow two sandpack/screen configurations for Phase I monitoring wells. A No. 10-20 silica sand filter pack and 0.020-inch slot screen are being used for monitoring wells completed in relatively homogeneous aquifer zones containing less than about 20% fines; a No. 20-40 silica sand filter pack and 0.010-inch slot screen are being used for monitoring wells completed in aquifer zones containing greater than about 20% fines, or when the monitoring zone contains clay or silt layers interbedded with sand or gravel units.
- Temporary steel casing minimum diameter size requirements for construction of 2.5-inch nominal diameter (2.875-inch outside diameter) monitoring wells has been modified to allow the use of 6-inch nominal diameter threaded steel casing, in addition to the 8-inch (welded) steel casing described in the work plan. Six-inch nominal diameter threaded steel casing has a 7-inch outside diameter (verses 6.625-inch for welded casing). Thus, the 4-inch

annular grout seal space required by the State of Washington Well Construction Regulations (WAC 173-160-075) can be achieved for 2.5-inch diameter monitoring wells using 6-inch nominal diameter threaded casing.

## **2.0 ACTIVITIES PROJECTED TO BE COMMENCED/COMPLETED DURING NEXT REPORTING PERIOD**

As specified in the Schedule for Submittal of Deliverables, the next reporting period will extend through November 1989. Anticipated activities for November include continuation of well construction activities. Specific activities anticipated to be commenced/completed during the next reporting period include:

- o Complete the first monitoring well at location CD-41. The well will be constructed in the existing boring and will be screened from about 380 ft to 400 ft BGS, at the base of the Lower Sand/Gravel Aquifer (by mid November).
- o Initiate drilling (with cable tool) for the first monitoring well at location CD-22. Anticipate switching to air rotary drilling if basalt is encountered (by early November).
- o Initiate drilling (with cable tool) for the first monitoring well at location CD-43 (by early November).
- o Initiate drilling (with air rotary) and complete the second and third monitoring wells at location CD-42 (by mid November).
- o Initiate and complete drilling (with air rotary) for the second monitoring well at location CD-41 (by late November).

- o Initiate well development, as scheduling permits (by mid November).

### 3.0 ENCOUNTERED/ANTICIPATED PROBLEMS

One drilling problem was encountered during the October reporting period, and one problem has been identified which may impact the schedule for commencing Phase I ground water sampling and analysis.

- o Excessive formation heave was experienced when collecting driven samples from the first boring at location CD-41. Drilling and sampling procedures were modified (with the concurrence of EPA/Ecology representatives) to address this problem, as described in Section 1.0 of this progress report.
- o EPA/Ecology review comments (if any) and approval of the revised Quality Assurance Project Plan (QAPjP), submitted to EPA/Ecology September 28, 1989, have not been received by the County. Initial ground water sampling and analysis is tentatively scheduled for mid to late December. EPA/Ecology QAPjP approval is needed by November 15, 1989 to prevent possible delay of Phase I ground water sampling and analysis activities.

\* \* \* \* \*

This progress report describes the major Remedial Action activities commenced or completed during the reporting period, anticipated to be commenced or completed during the next reporting period, and any problems encountered or anticipated. As such, there are secondary and peripheral activities associated with these major tasks that are not described herein. If clarification is required for any of the activities presented in this progress report, or if additional information is desired for secondary or peripheral activities, please contact me or Dean Fowler (Spokane County).

Very truly yours,  
LANDAU ASSOCIATES, INC.

By:



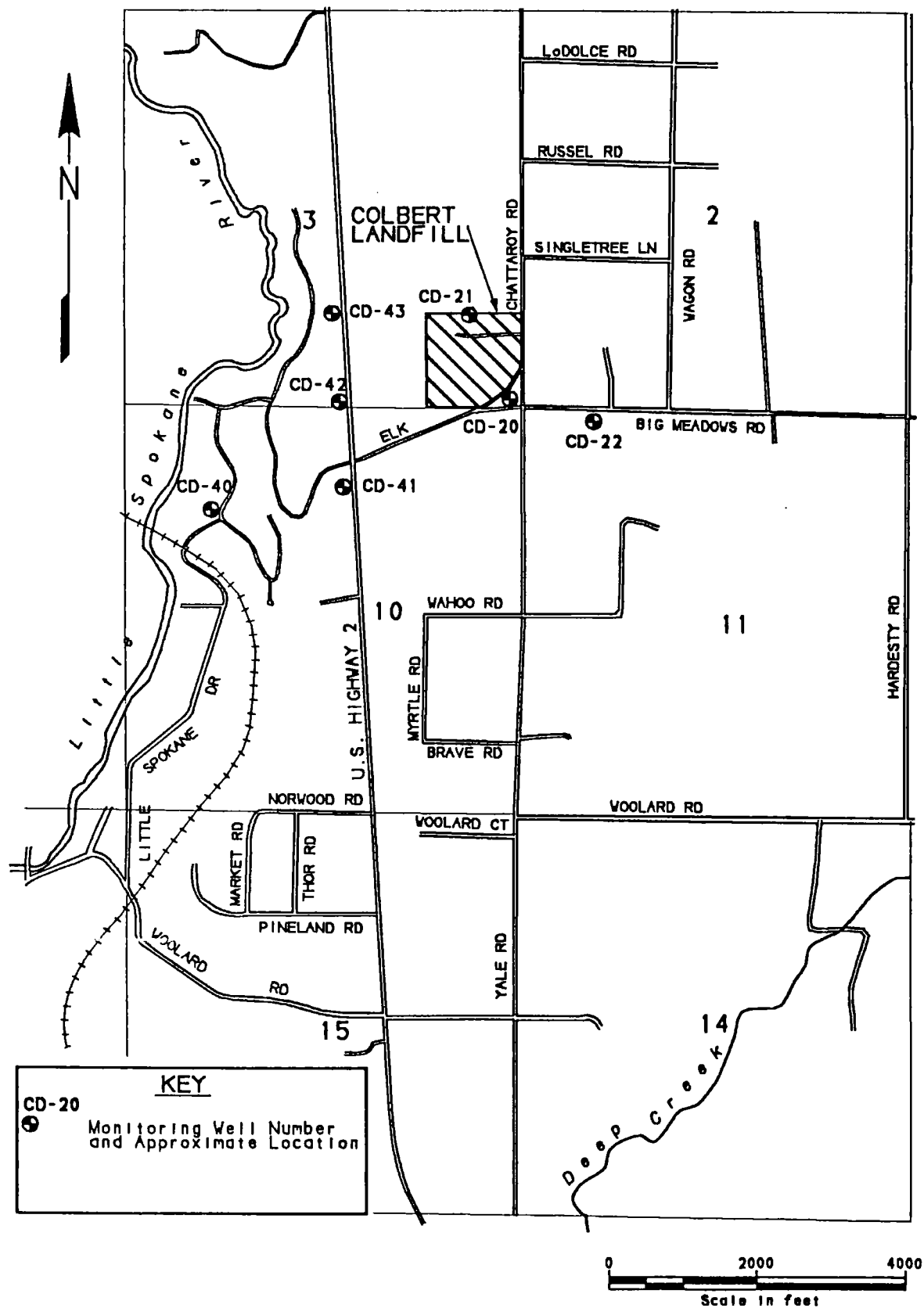
Lawrence D. Beard, P.E.  
Project Manager

LAB/kmo

No. 124-01.60

cc: Mr. Mike Blum

Washington Department of Ecology  
Mr. Dean Fowler  
Spokane County  
Mr. Lyle Diedieker  
Ecology and Environment  
Attachment



LANDAU ASSOCIATES, INC.

Site Plan

Figure 1